

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

PUBLICATION NUMBER : 07307316
PUBLICATION DATE : 21-11-95

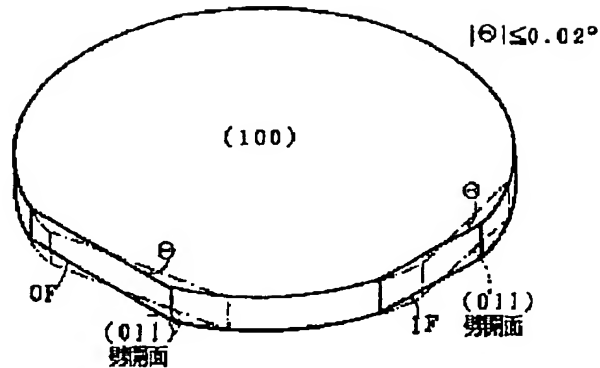
APPLICATION DATE : 12-05-94
APPLICATION NUMBER : 06124159

APPLICANT : SUMITOMO ELECTRIC IND LTD;

INVENTOR : NISHIURA TAKAYUKI;

INT.CL. : H01L 21/304 H01L 21/304 C30B 19/00
C30B 29/40 C30B 33/00 H01L 21/368
H01L 21/68 H01S 3/18

TITLE : III-V COMPOUND SEMICONDUCTOR
WAFER AND ITS MACHINING
METHOD



ABSTRACT : PURPOSE: To improve manufacturing yield of a laser semiconductor, and lower a minimum oscillation current, and enhance the current/light conversion efficiency, by machining a wafer having the (100) face of III-V compound semiconductor, in the manner in which the deviation of an orientation flat to be formed on the side surface from the cleavage plane is in a specified range.

CONSTITUTION: An ingot of III-V compound semiconductor crystal grown in the (100) direction is so ground that the crystal side surface is made to precisely conform to $(0 \pm 1 \pm 1)$. After that, the ingot is sliced into wafers. The grounded part forms an orientation flat. The deviation from a real cleavage plane is smaller than or equal to 0.02° . Thereby the manufacturing yield at the time of forming a device is improved, and the performance of a formed laser element is also improved. That is, the lateral cleavage plane does not intersect the skip scribe in the longitudinal direction, when the crystal is cut along the cleavage plane in the lateral direction, and the yield of the product is improved.

COPYRIGHT: (C)1995,JPO